Managing Neuropathy After Chemotherapy in Patients With Cancer

What you need to know

One of the most common and problematic side effects of chemotherapy is neuropathy.1 Depending on the type of chemotherapy, the amount of chemotherapy, and other factors including your health, you may experience mild, severe, or no symptoms of neuropathy. This is a guide to help you understand neuropathy caused by chemotherapy, including what symptoms you may have and how it is treated.

Chemotherapy can cause nerve damage, commonly called neuropathy2

- Usually, the tips of the feet and fingers are the most affected. The further away from the center of your body, the more likely that body part is affected.
- Some people have symptoms in their feet, hands, or both.
- There are 2 types of nerves
  - Sensory nerves, which give you feeling.
  - Motor nerves, which make your muscles move.
- Symptoms often begin after the third or fourth cycle of chemotherapy, but they sometimes can worsen for a few months after the therapy has been completed.
- Usually the higher the dose, the higher the risk of getting neuropathy.
- There are other reasons why the nerves can be damaged, including diabetes, heavy alcohol consumption, vitamin deficiencies, and certain cancers.

What kind of symptoms can I get?

Often, people with neuropathy from chemotherapy have ≥1 of the following:1

- Pain (burning, sharp, or aching)
- Muscle cramps (tightening or contracting your muscles)
- Numbness (you cannot feel your feet)
- Tingling (eg, pins and needles)
- Constipation (difficulty having a bowel movement)
- Other odd feelings, like your feet feeling squishy or like you have a rolled up sock under your foot
- Swelling and redness
- Weakness: it could be in your toes, feet, hands, and other places
  - Weakness can cause people to fall
  - You may experience difficulty walking or difficulty with buttoning your shirt

Many people report that their symptoms are worse in the evening, but this is not always the case.

What kind of chemotherapy can cause neuropathy?

Many different chemotherapies can cause neuropathy. You should discuss with your oncologist what chemotherapy you received. Some that more commonly cause neuropathy are as follows:

- Taxanes, such as taxol, paclitaxel, and docetaxel
- Vinca alkaloids, such as vincristine, vinblastine, vinorelbine, and vindesine
- Chemotherapy that contains platinum, such as cisplatin, carboplatin, and oxaliplatin
- Bortezomib

You may know these drugs by their brand names. If you are unsure about what chemotherapy you received, ask your doctor.

How does a doctor diagnose neuropathy?

A doctor can usually diagnose neuropathy by examining you for nerve damage and taking a detailed medical history, including what chemotherapy you received. Sometimes, they have to order specialized tests:2

- Electromyography: this test uses a tiny electric impulse and a small needle to test how well your nerves carry electricity to muscles.
Exercise ideas (must be done in pain-free way)
- Make gentle punching movements with your arms and let your trunk move as well.
- Reach up to the ceiling (try to touch the stars)
- Make gentle fistng motions overhead
- Make shoulder circles
- Roll a ball on a table top (good for shoulder, elbow, and wrist)
- Roll a marker between your palms

Desensitization
Certain techniques can desensitize a painful area and reduce your symptoms.
This may mean working with a physical therapist or occupational therapist who specializes in treating neuropathy. Some techniques you can try are as follows:
- Find various textures (eg, towels, clothing, upholstery) and rub your hands/feet on the material. Rub where you have sensory loss and also where you have normal sensation so that your brain can compare and understand. Try to do this off and on through the day for at least 20 minutes of total time.
- A physical therapist or occupational therapist can teach you these techniques and more if you are unsure or unable to perform these exercises yourself.
- Compression stockings can also be helpful because they help sensory feedback and decrease pain. Ask your doctor about this and make sure they are not tight because this can worsen the problem.
- Important: people with numbness should check their feet once a day to make sure they do not have cuts and bruises which they do not feel. Open wounds should be bandaged. Call your doctor if there is a concern for this.

Other management strategies
- Relaxation (eg, meditation) may reduce pain.
  - Deep breathing is also beneficial. Posture affects sensation, so changing positions and breathing deep can be helpful.
- Acupuncture may temporarily reduce pain.
- Electrical stimulation
  - A transcutaneous electrical nerve stimulation unit is something you wear that sends an electric signal down your leg. This can cancel out the pain, similar to how acupuncture works.
  - Sometimes, a spinal cord stimulator is placed near the spine. This sends a permanent electric signal down the leg to cancel the pain.

Discuss these options with your doctor if you have tried the other treatments but still have severe symptoms.

Are there any safety concerns because of neuropathy from chemotherapy?
People with neuropathy are at much greater risk of falling and getting hurt because of numbness in the feet and muscle weakness. Some ways to prevent falls are as follows:
- Remove extension cords, loose rugs, and other objects that are tripping hazards.
- Have a nightlight in hallways in which you may walk in the evening.
- Be especially careful on uneven ground (eg, a yard); this is more difficult to walk on than a flat surface.
- Your muscles may be weaker as the day goes on—so be careful, you may be at greater risk for falling in the evening.
- You might need to use a cane or a walker if you have poor balance. Consult your doctor.
- Sometimes people need braces to support their feet and legs if they are weak. Your doctor can evaluate to see if this will help you.

**Authorship**

Managing Neuropathy After Chemotherapy in Patients With Cancer was developed by Sara Christensen Holz, MD, Yevgeniya Dvorkin Wininger, MD, Cynthia Cooper, MFA, MA, OTR/L, CHT, and Sean R. Smith, MD. Smith can be reached at srsz@med.umich.edu.

**Disclaimer**

This information/education page may be reproduced for noncommercial use for health care professionals to share with patients and their caregivers. Any other reproduction is subject to approval by the publisher.

**References**